

The cough is frequently severe and occasionally associated with dyspnoea.

AIDS associated lymphomas differ from non-AIDS associated presentations in location, histological appearance, and natural history. In contrast to the general population, HIV associated lymphomas generally present with widely disseminated disease and frequent (65–90%) extranodal involvement.⁴ The gastrointestinal tract, bone marrow, and the central nervous system are common extranodal sites.⁵ Pulmonary involvement varies from 0% to 25%.⁶ HIV associated pulmonary lymphoma usually presents with mediastinal adenopathy, pleural effusions, or parenchymal involvement. Histologically these lymphomas are usually of the small non-cleaved cell, immunoblastic plasmacytoid, or large cell type and are always high grade.^{5,6} The natural course of HIV associated lymphoma is rapid decline with a median survival of 3–6 months after diagnosis.⁴

The Epstein-Barr virus has been associated with the development of AIDS associated lymphoma.⁷ This association may be the result of the virus acting as a B cell mitogen causing expansion of virus transformed B cell clones. These clones may proliferate in the setting of HIV impaired cellular immunity and lead to chromosomal translocation with subsequent malignancy.

To the best of our knowledge there has been only one other report of lymphoma presenting as a tracheobronchial lesion in an HIV infected patient.⁸ The cases are similar in that the lesions were located in the trachea, the chest radiographs were nearly normal, and endobronchial biopsy through a rigid bronchoscope was required to make the diagnosis as small

biopsies through a flexible bronchoscope were inadequate.

The number of cases of HIV associated lymphoma appears to be increasing. This may be because the incidence of lymphoma rises exponentially with longer duration of HIV infection⁹ and HIV infected patients are living longer. Clinicians should add pulmonary lymphoma to the differential diagnosis of an endobronchial lesion in an HIV infected patient, which includes Kaposi's sarcoma, bacterial tracheitis, bacillary angiomatosis, and tuberculosis.¹⁰ Although the chest computed tomographic scan and bronchoscopic appearance of endobronchial lymphoma may be impressive, rigid bronchoscopy with larger biopsy samples may be necessary to confirm the diagnosis.

- 1 Kilgore TL. Endobronchial non-Hodgkin's lymphoma. *Chest* 1983;**84**:58–61.
- 2 Papaioannou AN, Watson WL. Primary lymphoma of the lung: an appraisal of its natural history and a comparison with other localized lymphomas. *J Thorac Cardiovasc Surg* 1965;**49**:373–85.
- 3 Harper PG, Fisher C, McLennan K, Souhami RL. Presentation of Hodgkin's disease as an endobronchial lesion. *Cancer* 1984;**53**:147–50.
- 4 Lowenthal DA, Straus DJ, Campbell SW, Gold JW, Clarkson BD, Koziner B. AIDS-related lymphoid neoplasia. *Cancer* 1988;**61**:2325–37.
- 5 Knowles DM, Chamulak GA, Subar M, Burke JS, Dugan M, Wernz J, *et al.* Lymphoid neoplasia associated with the acquired immunodeficiency syndrome (AIDS). *Ann Intern Med* 1988;**108**:744–53.
- 6 White DA, Matthay RA. Noninfectious pulmonary complications of infection with the human immunodeficiency virus. *Am Rev Respir Dis* 1989;**140**:1763–87.
- 7 Boyle MJ, Swanson CE, Turner JJ, Thompson IL, Roberts J, Penny R, *et al.* Definition of two distinct types of AIDS-associated non-Hodgkin's lymphoma. *Br J Haematol* 1990;**76**:506–12.
- 8 Chaouat A, Fraisse P, Kessler R, Lang JM, Weitzenblum E. A life-threatening tracheal localization of lymphoma in a patient with AIDS. *Chest* 1993;**103**:1297–9.
- 9 Rabkin CS, Hilgartner MW, Hedberg KW, Aledort LM, Hatzaks A, Eichinger S, *et al.* Incidence of lymphomas and other cancers in HIV-infected and HIV-uninfected patients with hemophilia. *JAMA* 1992;**267**:1090–4.
- 10 Judson MA, Sahn SA. Endobronchial lesions in HIV-infected individuals. *Chest* 1994;**105** (in press).

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Department of
Invasive Cardiology
N P Buller
JSR Gibbs

Department of
Thoracic Surgery
P Goldstraw

Department of
Anaesthetics
LJ Murdoch

Royal Brompton
National Heart and
Lung Hospital,
London SW3 6NP

Reprint requests to:
Dr N P Buller.

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Removal of a dental post from the bronchus by interventional cardiovascular techniques

J S R Gibbs, L J Murdoch,
P Goldstraw, N P Buller

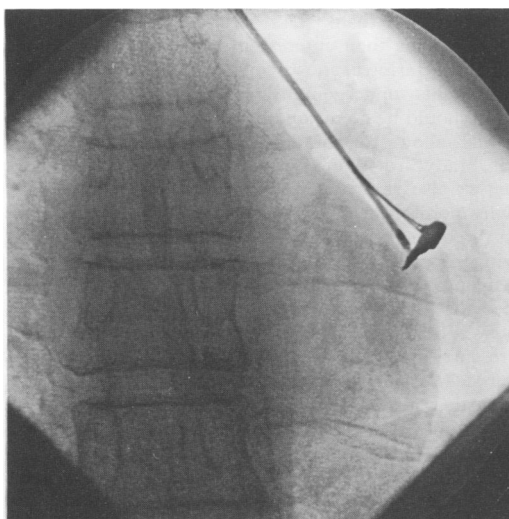
Abstract

Foreign bodies lodged in the bronchial tree are normally retrieved by bronchoscopy, but if this fails then thoracotomy is necessary. The case history is pre-

sented of a patient who had inhaled a dental post which could not be retrieved either by flexible or rigid bronchoscopy. Using biplane screening and intravascular retrieval devices introduced via an endotracheal tube, the dental post was removed successfully without the need for thoracotomy.

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Inhaled foreign bodies such as pieces of teeth which cause bronchial obstruction require removal to prevent the sequelae of haemoptysis and infection of the lung distal to the obstruction.¹ When the foreign body is not dislodged by coughing and physiotherapy, bronchoscopy with either flexible or rigid instruments is used for extraction under direct vision.² If this fails, thoracotomy may be necessary.



Anteroposterior radiograph of the dental post during retrieval from the left lower lobe bronchus showing the grasping forceps around the tapered end of the post and a snare around the crown. The left heart border is seen as a shadow on the left side.

Case report

A 60 year old man was admitted to hospital because of inhalation of a dental post. While his dentist was inserting the metal alloy post into an upper incisor the post fell onto the tongue and was inhaled by the patient who was reclining in the dental chair. He was referred immediately to the local hospital where a chest radiograph showed that the post was lodged in the left lung. Emergency flexible bronchoscopy was performed under sedation. The post was identified in the left lower lobe bronchus where it was grasped with gastroscopy forceps but from which it slipped and moved more distally into the bronchial tree. The following day the patient was referred to the Royal Brompton National Heart and Lung Hospital where a chest radiograph showed that the dental post was located in the posterior segment of the left lower lobe. At rigid bronchoscopy under general anaesthesia the top of the post could just be seen in the subsegmental bronchus. This was beyond the reach of a wide range of retrieval instruments and attempts to dislodge the post into a more proximal position using Fogarty catheters failed. Although normal practice is to proceed to thoracotomy, it was decided instead to refer the patient to the interventional cardiologists to attempt removal of the post using biplane imaging in the cardiac catheterisation laboratory.

The following day the patient was anaesthetised and intubated with a single lumen size 9 endotracheal tube with a self sealing valve on the end. The dental post was visualised in both the anteroposterior and lateral views using biplane fluoroscopy. A 9 French long vascular sheath was passed through the valve and down

the endotracheal tube via the left bronchus to the left lower lobe. Olympus intravascular grasping forceps were then passed down the sheath and, after being advanced out of its distal end, were used to grab the pointed end of the post. Although the post could now be pulled about 4 cm up the bronchus, its sharp edges caught on the side of the bronchus where it became jammed. The post was therefore moved distally again and rotated. Repeated attempts at extraction all failed and it was considered that a second device was needed to manipulate the post up the bronchial tree. Keeping the grasping forceps attached to the post, a long Microvena Amplatz snare was used to lasso the post under its crown (figure). The post was then pulled up the bronchus using a to and fro motion with the forceps and snare until it lay just distal to the end of the endotracheal tube. The endotracheal tube and the ensnared post were removed together to avoid snagging the post inside the tube. The procedure was performed in 71 minutes with a fluoroscopy time of 49 minutes. The patient made an uneventful postoperative recovery.

Discussion

Inhalation of dental material presents a difficult retrieval problem, particularly when time has elapsed between the incident and the attempt to remove it from the bronchial tree. If a rigid bronchoscope had been used in the first instance in our patient then further elaborate procedures may not have been necessary.

Foreign bodies such as fractured central venous catheters can be retrieved from within the circulation using grasping forceps, snares, or retrieval baskets specifically designed for this purpose.^{3,4} Such devices have also been used in the urinary and biliary tracts.⁵ This case demonstrates that such techniques may also be applied to the retrieval of foreign bodies from the bronchial tree under fluoroscopy, thus avoiding the need for thoracotomy. The increasing sophistication of intravascular retrieval devices allows their successful use outside the circulation, and may obviate the need for thoracotomy to remove foreign bodies in the bronchial tree.

- 1 Poukkula A, Ruotsalainen EM, Jokinen K, Palva A, Nuorviita J. Long-term presence of a denture fragment in the airway (a report of two cases). *J Laryngol Otol* 1988;102:190-3.
- 2 Bednarski Z. Foreign bodies in the tracheobronchial tree of adults. *Wiad Lek* 1989;42:498-502.
- 3 Uflacker R, Lima S, Melichar AC. Intravascular foreign bodies: percutaneous retrieval. *Radiology* 1986;160:731-5.
- 4 Yedlicka JW Jr, Carlson JE, Hunter DW, Castaneda-Zuniga WR, Amplatz K. Nitinol gooseneck snare for removal of foreign bodies: experimental study and clinical evaluation. *Radiology* 1991;178:691-3.
- 5 Selby JB, Tegtmeyer CJ, Bittner GM. Experience with new retrieval forceps for foreign body removal in the vascular, urinary, and biliary systems. *Radiology* 1990;176:535-8.